

Abstract

Color reproducibility and noise

characteristic are improved. An imaging device having
a hybrid RGBYC color filter using a primary color
5 system RGB filter and a complementary color system YC
filter is composed. Four G filters that directly
relate to resolution and that is close to a luminance
signal that human eyes sense are arrayed in a checker
shape so that the number of the G filters is four times
10 larger than the number of filters of each of the other
colors. An array shown in Fig. 10A is composed of low
resolution rows (G, R, G, and B) and high resolution
rows (C, G, Y, and G) that are alternately arrayed in
each line. When signals are read if exposure times are
15 varied for individual lines, the signals that are read
can easily have a wide dynamic range. An array shown
in Fig. 10B has two Gs, a low sensitivity color, and a
high sensitivity color in each line and each row. Thus,
the luminance difference is small in the horizontal
20 direction and the vertical direction. Thus, the
reading method in the array shown in Fig. 10B is
slightly complicated than that in the array shown in
Fig. 10A. However, since the special interpolation
characteristic of the array shown in Fig. 10B is
25 advantageous, a smooth gradation can be easily
represented.